

What is claimed is:

1. A method for preserving message order when parallel processing messages, comprising:

5 receiving messages each including a marker for identifying a message source;

responsive to receipt of a message, using the marker to identify the source of the message and determining whether it is required to preserve the message order; and

10 dispatching each message in accordance with its marker to one of a plurality of parallel processing threads such that processing order is preserved when required for messages processed through the plurality of parallel processing threads.

15 2. The method of claim 1 wherein the step of dispatching comprises:

retaining a list of all markers of messages that are being processed in parallel;

20 determining whether the marker of a new message is present in the list; and

delaying initiating parallel processing of the new message until the marker is no longer in the list.

25 3. The method of claim 2 further comprising maintaining an ordered queue for each marker that is in the list of messages being processed, and, when message processing by one of the plurality of parallel processing threads completes for a marker, dispatching to said one of the

plurality of parallel processing threads the next message in the ordered queue for said marker.

4. The method of claim 1 wherein a predetermined value of the marker indicates that ordering is not required.

5. The method of claim 1 wherein the marker is derived from characteristics of the source of the ordered messages.

6. The method of claim 5 wherein the characteristics include at least one of:

an identifier of the user originating the message;  
an identifier of a repository on which message is

put;

an identifier associated with a respective input node receiving the message; and

an identifier associated with the mode of processing.

7. The method of claim 6 wherein the characteristics include:

an identifier of the user originating the message;  
an identifier associated with a respective input

node receiving the message; and

an identifier associated with the mode of processing.

8. The method of claim 6 wherein the characteristics include:

an identifier of the user originating the message;  
an identifier of a repository on which message is  
put; and  
an identifier associated with the mode of  
processing.

9. The method of claim 1 wherein the marker comprises a hash code.

10. A system for preserving message order when parallel processing messages, comprising:

means for receiving messages;

means, responsive to a marker within a received message, for identifying a source of the message and determining whether it is required to preserve the message order; and

a dispatcher for dispatching each message in accordance with its marker to one of a plurality of parallel processing threads such that processing order is preserved when required for messages processed through the plurality of parallel processing threads.

11. The system of claim 10, wherein the dispatcher comprises:

means for accessing a list of all markers of messages that are being processed in parallel;

means for determining whether the marker of a new message is present in the list; and

means for delaying initiating parallel processing of the new message until the marker is no longer in the list.

5 12. The system of claim 11, further comprising an ordered queue for each marker that is in the list of messages being processed, and the dispatcher comprises means for, when message processing by one of the plurality of parallel processing threads completes for a  
10 marker, dispatching to said one of the plurality of parallel processing threads the next message in the ordered queue for said marker.

13. The system of claim 10 wherein a predetermined value of the marker indicates that ordering is not required.  
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14. The system of claim 10 wherein the marker is derived from characteristics of the source of the ordered messages.  
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15. The system of claim 14 wherein the characteristics include at least one of:

an identifier of the user from whom the message originates;

25 an identifier of a respective input node receiving the message;

an identifier of a repository on which message is put; and

30 an identifier associated with the mode of processing.

16. The system of claim 15 wherein the characteristics include:

an identifier of the user from whom the message originates;

an identifier of a respective input node receiving the message; and

an identifier associated with the mode of processing.

17. The system of claim 15 wherein the characteristics include:

an identifier of the user from whom the message originates;

an identifier of a repository on which message is put; and

an identifier associated with the mode of processing.

18. The system of claim 10 wherein the marker comprises a hash code.

19. A computer program element comprising computer program means for performing the method of claim 1.

20. A computer program product comprising program code recorded on a machine readable recording medium, for controlling the operation of a data processing system on which the program code executes, to perform the method of claim 1.